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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 09/418,418

Filing Date: October 15, 1999

Appellant(s): BHARAT ET AL.

Albert C. Metrailler, Reg. 27,245
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 04/26/2006 appealing from the Office action mailed 10/05/2005.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

Chakrabarti et al. (Automatic resource compilation by analyzing hyperlink structure and associated Text April 14, 1998).

Page (US. Patent No. 6,285,999 B1).

Yu (US. Patent No. 6,167,552)

Chakrabarti (US. Patent No. 4,418,433).

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-4, 20 and 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chakrabarti et al. (Automatic resource compilation by analyzing hyperlink structure and associated Text April 14, 1998) in view of Page (US. Patent No. 6,285,999 B1).

Regarding claims 1 and 20-21, Chakrabarti teaches:

ranking the expert document in accordance with the search query by (hub score, page. 3, line 10)

ranking target document pointed to by the ranked expert documents (authority page, page. 2, line 45 and ranking page. 3, lines 10-11).

return a results list based on the ranked expert documents (page. 3, lines 11-13).

Chakrabarti does not explicitly teach forming a set of expert documents from the set of all hypertext documents crawled without reference to the search query. However, Page also discloses forming a set of expert documents from the set of all hypertext documents crawled without reference to the search query (col. 2, lines 51-54). This passage suggests in order to rank the documents the system has to crawl and score these documents. Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to include crawling and ranking the crawled documents based on the measure of importance into Chakrabarti in order to organize relevancy of documents in the world wide web to assist the user the search processes.

Regarding on claim 2, Chakrabarti hypertext documents are pages in the World Wide Web (page 2, lines 34-35).

Regarding on claim 3, Chakrabarti hypertext documents are documents in a hypertext database (page 2, lines 34-35).

Regarding on claim 4, Chakrabarti teaches the subject matter except for the hypertext documents are document in hypertext database (page 2, lines 34-35). Regarding claim 14, Chakrabarti does not teach ranking target documents pointed to by the expert documents includes: determining a plurality of edge scores for each target document, where an edge score is determined for edges between the expert document and the target document; determining a target score in accordance with the edge scores of the target document; ranking the target document in accordance with the target scores. However, Page teaches ranking target documents pointed to by the expert documents includes: determining a plurality of edge scores for each target document,

where an edge score is determined for edges between the expert document and the target document; determining a target score in accordance with the edge scores of the target document; ranking the target document in accordance with the target scores [fig. 2]. Therefore, it would have been obvious to one ordinary skill in the art to include the teaching of page into Chakrabarti and Page because such a ranking the target document would allow Chakrabarti's system to be able to link from the root document to the relevant document to allow the user get to the relevant site.

Regarding on claim 15, Chakrabarti does not explicitly teach determining an edge score only for those link to the target document from a predetermined number of top-ranked expert documents

Page teaches determining an edge score only for those links to the target document from a predetermined number of top-ranked expert documents (col. 4, lines 5-38).

Therefore, it would have been obvious to one ordinary skill in the art to modify Chakrabarti to include the determining the edge score of Page would allow Chakrabarti's system the enhanced capability of allowing the user get to the relevant site.

Regarding on claim 16, Page teaches selecting target documents to be ranked that are linked to by at least two mutually non-affiliated selected expert documents, where the selected target also is not affiliated with the expert documents (A and B, fig. 2).

Regarding to claim 17, Chakrabarti teaches an edge score between an expert document and a target document $ES(E,T)$ is determined as follows, where ExpertScore reflects the ranking of the expert documents:

- a) find # occurrences of each keyword in all keyphrases of expert document E (page 3, lines 21-23).
- b) if the # occurrences for any keyword in E is 0: $ES(E,T)=0$ [page 3, lines 30-32]
else $ES(E,T)=\text{ExpertScore}(E) * \text{sum of #occurrences for all keyword}$ (col. 3 lines 32-40).

Regarding to claim 18, Chakrabarti does not explicitly teach if two affiliated experts have edges to the same target, the edge having a lower edge score is discard an is not used to determine the target score.

However, Page teaches if two affiliated experts have edges to the same target, the edge having a lower edge score is discard an is not used to determine the target score (col. 5, lines 49-59).

Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to modify Chakrabarti to include if two affiliated experts have edges to the same target, the edge having a lower edge score is discard an is not used to determine the target score as taught to allow allow the Chakrabarti's system to determining for the pages that are more important.

Regarding on claim 22, Chakrabarti teaches ranking the expert documents in accordance with the search query comprises:

Determining a level score for each of the expert documents (page 3, lines 1-2);

Determining a fullness factor for each key phrase on each of the expert documents (page 4, 28); and

Determining an expert score (a hub score, $h(p)$) (page 3, line 10) for each expert document in accordance with the level score of the expert document (page 3, line 28) and the fullness factors for the key phrases of the expert document (page 4, line 7).

Regarding on claim 23, Chakrabarti teaches determining which of the hypertext document are expert documents occurs before a search query is received (the algorithm first gathers a collection of pages from among which it will distill ones that is consider to be the best topic) (page 3, lines 34-35).

Claims 5-10 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chakrabarti et al [Automatic Resource compilation by analyzing hyperlink structure and associated text, April 14, 1998] in view of Page (US. Patent No. 6,285,999 B1) and further in view of Yu (U.S. Patent No. 6,167,552).

Regarding on claim 19, Chakrabarti and Page do not teach two hypertext documents are affiliated if at least one of the following is true: 1) they share the same rightmost non-generic suffix they have an IP address in common.

Yu teaches that two hypertext documents are affiliated if at least one of the following is true: 1) they share the same rightmost non-generic suffix (col. 7, lines 55-56and 2) they have an IP address in common (col. 7, lines 50-56).

Therefore, It would have been obvious to one ordinary skill in the art at the time of the invention is made to include modify Chakrabarti and Page system to include

hypertext documents are affiliated as taught by Yu in order to classifying them in the common group for fast easy search.

Ragarding on claim 5, Chakrabarti and Page do not teach expert reverse index is constructed in memory for keywords appearing in the expert documents, the expert reverse index identifying the location of the keywords in the expert documents.

Yu discloses the prior art that an expert reverse index is constructed in memory for keywords appearing in the expert documents, the expert reverse index identifying the location of the keywords in the expert documents (col. 3, lines 31-34).

Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to modify Chakrabarti and Page to include the inverted index as disclosed by Yu would allow Chakrabarti's system to locate the keyword in the document to determine an expert document.

Regarding on claim 6, Chakrabarti page does not explicitly teach an expert document is included in the expert reverse index if the keyword is part of a key phrase that qualifies at least one URL in the expert document.

Yu disclosed in the prior art wherein a keyword of an expert document is included in the expert reverse index if the keyword is part of a key phrase that qualifies at least one URL in the expert document (col. 3, lines 23-24).

Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to modify Chakrabarti and Page system to include the reverse index as disclosed by Yu to locate the keyword in the document and determine the document is the expert document.

Regarding on claim 8, Chakrabarti and Page do not explicitly teach a key phrase in an HTML title qualify all URLs in the entire document.

Yu teaches a key phrase in an HTML title qualify all URLs in the entire document (col. 12, lines 9-12).

Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to modify Chakrabarti and Page system to include the key phrase in an HTML title qualify all URLs in the entire document as taught by Yu to allow the document to be heavily weight as an important document.

Regarding on claim 7, Chakrabarti and Page do not explicitly a key phrase qualifies a URL if the URL within the scope of the key phrase in the expert document.

Yu teaches a key phrase qualifies a URL if the URL within the scope of the key phrase in the expert document (col. 8, lines 9-19).

Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to modify Chakrabarti and Page system to include the key phrase is the URL as taught by Yu in order to determine the key phrase in the expert document.

Regarding on claim 9, Chakrabarti and Page do not teach a key phrase in an HTML heading qualifies all URLs in that portion of the document before a next HTML heading in the document of greater or equal importance

However, Yu teaches a key phrase in an HTML heading qualifies all URLs in that portion of the document before a next HTML heading in the document of greater or equal importance (col. 10, lines 29-32).

Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to modify Chakrabarti and Page system to include the key phrase in an HTML heading qualifies all URLs as taught by Yu in order to determine which of the URLs are the most information links.

Regarding on claim 10, Chakrabarti and Page do not explicitly teach a key phrase in an HTML anchor qualifies the URLs in the anchor.

However, Yu teaches a key phrase in an HTML anchor qualifies the URLs in the anchor (page. 12, lines 6-12).

Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to modify Chakrabarti and Page system to include the phrase in an HTML anchor of Yu to allow Chakrabarti to read and weight as the important one.

Claims 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chakrabarti et al [Automatic Resource compilation by analyzing hyperlink structure and associated text, April 14, 1998] further in view of Page (US. Patent No. 6,285,999 B1) and further in view of Chakrabarti (US. Patent No. 4,418,433).

Regarding on claim 11, Chakrabarti and Page do not explicitly teach at least a predetermined number of outlinks to be an expert document if the document also point to at least the predetermined number of targets on distinct non-affiliated hosts. However, Setting condition such as threshold or predetermine is known in the art for Chakrabarti also teaches, least a predetermined number of outlinks to be an expert document if the document also point to at least the predetermined number of targets on

distinct non-affiliated hosts. This teaches the claimed predetermined number of outlinks to be an expert document. Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to modify the teaching of Chakrabarti and Page system to include least a predetermined number of outlinks to be an expert document if the document also point to at least the predetermined number of targets on distinct non-affiliated hosts to allow the Chakrabarti's system the enhanced capability of determining which of the pages in the web would satisfy the condition to be an expert page.

Regarding on claim 12, Chakrabarti teaches expert documents additionally must point to documents that share the same broad classification (page. 10, lines 20-33).

(10) Response to Argument

The appellants disagree with the Examiner's interpretations of Chakrabarti and Page. The Appellants submits that no combination of the references would result in a system that would make the present invention obvious.

Chakrabarti discloses the concept of scoring the hub page and authority pages for the searching system. In Chakrabarti each hub page and authority page is given a score based on the calculation page 3, lines 19-24. In the same concept, Page disclosure an invention to determining the score of the document using the weight link method for example, a document has more link point to it will receive higher weight than the document having less link document pointed to (col. 4, lines 5-65). Since these methods determine the weight for a documents based on the links; therefore, the

motivation is to allow the document which has a highest score to be retrieved using the calculation of a document .

Appellants argue "all of the teaching and ranking taught by Chakrabarti includes or is based on a topic, i.e., a search query. Chakrabarti never teaches forming a set of expert documents from all hypertext documents without reference to a search query. Chakrabarti does not teach ranking expert documents, but instead ranking a topic based subset of documents. Chakrabarti returns a set of ranked documents based on his augmented set that includes that includes documents pointed to by the root set. Chakrabarti does not teach returning a results list based on the ranked target documents, that would correspond to a portion of, but not all of, his augmented list."

The examiner disagrees with all the above argument. First, the claimed limitation directs to "forming a set of expert document fro the set of all hypertext documents crawled without reference to a search query" which can be interpreted as the expert documents can be formed by the topic (disclosed by Chakrabati, page 2, lines 36-40) wherein the topic is different from the search query wherein in the pre-ample the search query is used to search for hypertext document. The step of forming the expert document has no reference to the search query because the query is used to search for the hypertext documents not using for forming the expert document. Therefore, the topic in Chakrabarti is used for forming the expert document without reference to the search query. In addition, the claimed limitation can also be interpreted as crawling all the hypertext document to form a expert document without a topic search still disclosed by Page, wherein Page discloses a web crawler explores the web and creates an index

of the web content, as well as a directed graph of nodes of the graph (i.e. pages of the web) are then ranked according to importance as described above connection with various exemplary embodiments of the present invention" (col. 8, lines 6-20). Web crawler does not require topic to form the expert documents. In the first case, Chakrabarti is met the claim broadest interpretation because the claim limitation does not exclude from forming the expert document based on a topic. Even if the applicant aiming for a traditional web crawler, Chakrabarti can form an expert document without a topic in the web indexing system because Chakrabarti presents a case study which requires a topic for forming expert document in which least to a second interpretation which Page clearly discloses web crawler do not require to a topic to form the expert documents.

Second, the claimed limitation does not explain how to rank expert document, the "hub pages" are scored by the calculation of (1) replace each $a(p)$ by the sum of the $h(p)$ values of pages pointing to p ; (2) replace each $h(p)$ by the sum of the $a(p)$ values of pages pointed to by p ...The idea is to iterate this new, text-weight process for a number of steps, then pick the pages with the top hub and authority scores" (page 3, lines 19-25); therefore, this weighting process produce a value for each hub page used where the score is used for ranking the relevancy of pages in web.

Third, the examiner respectfully disagrees "Chakrabarti does not teach returning a result list based on the ranked target document, that would correspond to a portion of, but not all of, his augmented list." The authority page is also calculated by the links

from many of the hub pages where the score of the authority page is determined its relevancy and returned back to the requester (page 3, lines 12-14 and 19-25)

Appellants also argue "Page does not teach ranking all documents crawled without reference to a search query."

The examiner respectfully disagrees with the above argument. As explain in the section above, the Page discloses a web crawler explores the web and creates an index of the web content to the structure of hyperlinks. The nodes of the graph (i.e. pages of web pages)..." (col. 8, lines 14-20). The crawling does not required a topic nor search query to be searched.

Appellant also argue "since neither Chakrabarti nor Page teaches forming a set of expert document without reference to a search query, they cannot teach ranking a set of expert documents formed without reference to a topic or search query."

The examiner respectfully disagrees with the above argument. As explained in the section above, each of the hub page is calculated by the equation discloses in page 3, lines 19-25 where the score of the hub page is used to rank hub page among other pages in the web.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Examiner

BT

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